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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/242,490	05/13/1999	MINORU USUI	Q53288	1121

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EXAMINER

NGHIEM, MICHAEL P

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 11/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/242,490

Applicant(s)

USUI ET AL.

Examiner

Michael P Nghiem

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19 is/are allowed.
- 6) ☒ Claim(s) 20 and 22-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

The Amendment filed on September 12, 2002 has been acknowledged.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the protrusion and/or groove axially **extends from the second ink supply path**, across the first open end, and **into the first ink supply path**" (claims 22, 28) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

Art Unit: 2863

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 20, 22, 23, 25, 26, 28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Boyd et al. (US 5,812,165).

Boyd et al. discloses all the claimed limitations including:

- an ink supply passage structure for supplying ink from an ink cartridge to a recording head (Figs. 2, 5), comprising:

- a first ink supply path (top passage of 40b) having a first open end (bottom open end of top passage), wherein said first ink supply path axially terminates at the first open end (Fig. 5);

- a second ink supply path (bottom passage of 40b) connected to and extending from the first open end to be communicated with the first ink supply path (Fig. 5), wherein the second ink supply path is at least as large in cross sectional area as the first ink supply path (top and bottom passages are equal in cross sectional area at where they meet), and the first open end of the first ink supply path forms an axial terminus of the second ink supply path (first path terminates at second path);

Art Unit: 2863

- a protrusion (protrusion between 50's, Fig. 4) and/or groove (50) axially provided to the second ink supply path (Fig. 2), wherein the protrusion and/or groove axially extends along the second ink supply path and axially terminates at the first open end of the first ink supply path (Fig. 2),

- wherein the first ink supply path axially terminates at a longitudinal axis of the first ink supply path (Fig. 2),

- wherein the longitudinal axis of the first ink supply path is substantially parallel to a longitudinal axis of the second ink supply path (Fig. 2), and

- wherein the first ink supply path is located upstream of the second ink supply path in a direction in which ink is supplied from the ink cartridge to the recording head (Fig. 2);

- wherein the protrusion and/or groove axially, extends from the second ink supply path, across the first open end (protrusion extends in the axial direction, Fig. 4), and into the first ink supply path (protrusion extends in the longitudinal direction, Fig. 2);

- a portion of the second ink supply path containing the protrusion and/or groove is in the form of a conical chamber (Fig. 2);

- a plurality of protrusions are arranged along an inner circumference of the second ink supply path so that an ink induction path is formed between each adjacent pair of the protrusions (Fig. 5);

- a plurality of grooves are arranged along an inner circumference of the second ink supply path so that each of the grooves forms an ink induction path (Fig. 5);

Art Unit: 2863

- the cross sectional area of the first ink supply path is substantially constant over an entire length of the first ink supply path (walls of first passage is very slightly slanted, Fig. 5).

Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Boyd et al. (US 5,812,165).

Boyd et al. discloses all the claimed limitations including:

- an ink supply passage structure (Figs. 2, 5) comprising:

- a first ink supply path (bottom passage of 40b) having a first open end (top open end of first passage, Fig. 5), wherein said first ink supply path axially terminates at the first open end (Fig. 5);

- a second ink supply path (top passage of 40b) connected to and extending from the first open end to be communicated with the first ink supply path (Fig. 5), wherein the second ink supply path is at least as large in cross sectional area as the first ink supply path (Fig. 5), and the first open end of the first ink supply path forms an axial terminus of the second ink supply path (Fig. 5);

- a protrusion (protrusion between 50) and/or groove (50) axially provided to the second ink supply path, wherein the protrusion and/or groove is contiguous to at least the first open end of the first ink supply path (Fig. 5), wherein the first ink supply path axially terminates at a longitudinal axis of the first ink supply path (Fig. 5), and

Art Unit: 2863

wherein the longitudinal axis of the first ink supply path is substantially parallel to a longitudinal axis of the second ink supply path (Fig. 5);

- a filter (42) located at an opposite axial terminus of the second ink supply path (Fig. 5), wherein said opposite axial terminus is opposite to said axial terminal of the second ink supply path (Fig. 5).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al..

Boyd et al. discloses all the claimed limitation except that the protrusion is formed of material having ink affinity.

However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the protrusion of Boyd et al. such that it is formed of a material having ink affinity for the purpose of enhancing the capillary effect disclosed by Boyd et al..

All wabl Subj ct Matter

4. Claims 1-19 are allowed.

Reason For Allowance

5. The combination as claimed wherein an ink jet recording apparatus comprising a joint area being tapered such that a cross-sectional area of said joint area gradually changes along a direction from said second ink supply path to said first ink supply path (claims 1, 15) or ink induction paths are formed by mounting a rib formation member in an enlarged portion (claim 10) or ink induction paths are formed in a holder that is mounted in an enlarged portion, said holder including a rod-shaped member that is positioned coaxially with said second ink supply path (claim 12) is not disclosed, suggested, or made obvious by the prior arts of record.

Response to Arguments

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2863

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



MICHAEL NGHIEM
PRIMARY EXAMINER

Michael Nghiem

November 19, 2002